REMARKS

Claims 1-33 are pending in the application.

Claims 1-33 have been rejected.

Claims 1, 2, 3, 9, 10, 16, 22, and 28 have been amended. Support for these amendments can be found, at least, in paragraph 56 of the specification. No new matter has been added.

Rejection of Claims under 35 U.S.C. §103(a)

Claims 1-4, 6, and 10-33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2004/0153739 naming inventors Trimmer et al. ("Trimmer '39"), which incorporates by reference U.S. Patent Publication No. 2004/0034811 naming inventors Trimmer et al. ("Trimmer '11") and U.S. Patent Publication No. 2004/0111251 naming inventors Trimmer et al. ("Trimmer '51"), in view of U.S. Patent Publication No. 2004/0078639 naming inventors Anna et al. ("Anna"). Applicants respectfully traverse this rejection with respect to the amended claims.

As noted in previous responses, the cited art fails to teach or suggest a virtual device interface that is configured to allow a primary storage device to be accessed using at least one operation that is substantially the same as that used to control a secondary storage device, where the virtual device interface is also coupled to control both said primary storage device and said secondary storage device.

The Office Action mailed may 4, 2007 ("Office Action") relies upon Trimmer '39 to teach the above-quoted features of claim 1. Office Action, p. 4. Trimmer '39 describes a system in which data originating in a computer network 56 (this network is erroneously described as "host computer #56" on page 4 of the Office Action) can be backed up to a virtual tape library (VTL) 52 by a data protection application (DPA) 60. Trimmer '39, paragraph 30. The DPA is not aware that the VTL is not an actual physical tape library (PTL); accordingly, the DPA writes data to the VTL in "exactly the same format as if the DPA 60 was writing the data to tape." *Id.*

An emulator within the VTL "translates the relevant DPA commands to the format of the VTL so that the commands sent by the DPA may be carried out by the VTL." U.S. Patent Publication No. 2004/0111251 naming inventors Trimmer et al. (Trimmer '51), paragraph 24. Accordingly, the disclosure in Trimmer '51 (which is part of Trimmer '39 by operation of the incorporation by reference set forth in paragraph 10

of Trimmer '39) makes it clear that the VTL cannot understand the commands generated by the DPA without the assistance of the emulator.

In the Trimmer references (Trimmer '39 and Trimmer '51), no single component is coupled to control both a primary storage device (which includes non-removable storage media) and a secondary storage device (which includes removable storage media). As shown above, it is the emulator within the VTL (as described in Trimmer '51) that allows the VTL to be accessed in the same manner as a PTL, and this emulator is clearly never shown or described as being "coupled to control" a PTL in addition to a VTL. Accordingly, Trimmer's emulator clearly neither teaches nor suggests the virtual device interface of claim 1.

None of the other components of Trimmer's system both provide the functionality of a virtual device interface and are coupled to control both a primary and secondary storage device. Accordingly, the other cited portions of Trimmer, both alone and in combination with the portions of Trimmer that describe the emulator, also fail to teach or suggest the virtual device interface of claim 1.

The Examiner relies upon paragraph 15 of Trimmer '39 as the basis for the assertion that "the virtual tape library system capable of electronically copy data [sic], for example, to local disk storage #54 and to remote off site physical tape library." Office Action, p. 4. This assertion appears to be the basis for asserting that Trimmer '39 teaches "said virtual device interface is coupled to control said primary storage device and said secondary storage device." Office Action, p. 4.

Paragraph 15 of Trimmer 39 fails to teach or suggest a virtual device interface configured and coupled in the manner recited in claim 1. Paragraph 15 of Trimmer merely states that "data in one VTL may be electronically copied or otherwise copied to another remotely located VTL or VTLs." This fails to teach or suggest a secondary storage device (which, as noted above, includes removable storage media) or a virtual device interface that is coupled to control both a primary and a secondary storage device. The mere fact that data "may be electronically copied" between VTLs provides no teaching or suggestion as to what component of Trimmer's system is controlling that copying activity, nor does it teach or suggest any control of or coupling to a secondary storage device, since Trimmer's VTLs all include non-removable storage media and can thus only be properly equated with the primary storage device of claim 1.

Other portions of Trimmer '39 and '51 that describe copying data to a PTL do not describe such copying being initialized by a device that performs the functionality of a virtual device interface. For example, paragraph 14 of Trimmer '51 describes how the write operations made by the DPA to the VTL can be kept in a log and how physical tapes can then be created by playing back the log. However, such portions of the Trimmer references are completely silent as to which component performs such playback or as to whether such a component would be "coupled to control" both a primary and secondary storage device. Thus, these portions of Trimmer also fail to teach or suggest the virtual device interface of claim 1, which is coupled to control both primary and secondary storage devices.

As noted above, the Trimmer references also fail to teach or suggest that Trimmer's emulator be coupled to control a secondary storage device. The emulator is the component within Trimmer's system that allows a VTL to be accessed as if the VTL was a PTL. In Trimmer '51, the emulator is clearly shown as being part of the VTL, and no teaching or suggestion is provided in any of the Trimmer references that the emulator be coupled to control a PTL or other secondary storage device. Thus, Trimmer's emulator clearly cannot be equated with the virtual device interface of claim 1. Furthermore, since the emulator is the only component within Trimmer's system that allows a VTL to be accessed as a PTL (the DPA simply interacts with the VTL as if the VTL were a PTL, and thus, absent the emulator, the DPA could not interact with the VTL properly), no other component of Trimmer's system can be equated with the virtual device interface of claim 1. Anna, which is not relied upon to teach any portion of the "virtual device interface" of claim 1, also fails to teach or suggest the above-described features.

In response to the above arguments, the Examiner now indicates that the combination of the DPA and the emulator in the VTL are being equated with the virtual device interface of claim 1. Final Office Action mailed November 7, 2007 ("Final Office Action"), pp. 11-12. As described in Trimmer '39, the DPA is a data protection application. Trimmer '39, paragraph 3. A DPA can send write operations to the VTL in the same manner in which the DPA could send write operations to a PTL. Trimmer '39, paragraph 30. Thus, any commands and calls that trigger operation of the emulator in Trimmer's VTL are received from the DPA.

The combination of Trimmer's VTL emulator and Trimmer's DPA is not a virtual device interface that is configured to allow a primary storage device to be accessed using at least one operation that is substantially the same as that used to control a secondary storage device, where the primary storage device is accessed using the at least one operation in response to a call received from a utility by said virtual device interface. In particular, the components of Trimmer equated with the virtual device interface of claim 1 do not receive a call (or command) from a utility and then allows a primary storage device to be accessed in response to that call. Instead, activity is initiated internally in Trimmer's system: the DPA (which the Examiner equates with the virtual device interface of claim 1) sends write operations to the emulator in the VTL (which the Examiner also equates with the virtual device interface of claim 1), and the emulator in the VTL translates those write operations to the appropriate format. Accordingly, Trimmer neither teaches nor suggests a virtual device interface like that of claim 1, which receives a call from a utility. Anna, both alone and in combination with the Trimmer references, also fails to teach or suggest such a feature.

For at least the foregoing reasons, the cited art fails to teach or suggest claim 1 and its dependent claims 2-4 and 6. Claims 10-33 are patentable over the cited art for similar reasons.

Further with respect to claim 13, the cited art fails to teach or suggest creating a virtual loader, where creating the virtual loader creates a directory on a hard drive. The Examiner relies upon paragraph 20 of Anna to teach this feature (Final Office Action, p. 7); however, the cited portion of Anna merely discloses using different directories to store different records, which in turn record the primary and secondary locations of virtual volumes. Anna, paragraph 20. Nothing in this portion of Anna teaches or suggests creating a directory on a hard drive as part of the process of creating a virtual loader.

Similarly with respect to claim 14, the cited art fails to teach or suggest storing information in a file, where the file corresponds to a virtual tape. The cited portion of Anna, described above, merely teaches that records, which identify the locations of virtual volumes, can be stored in different directories. This clearly fails to teach or suggest a file that corresponds to a virtual tape.

Claims 5, and 7-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Trimmer '39" and Trimmer '11", in view of Anna and further in view of Trimmer
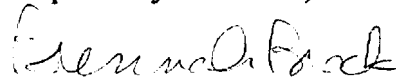
'51". Applicants respectfully traverse this rejection for at least the foregoing reasons set forth above with respect to claim 1.

CONCLUSION

In view of the amendments and remarks set forth herein, the application and the claims therein are believed to be in condition for allowance without any further examination and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephone interview, the Examiner is invited to telephone the undersigned at 512-439-5087.

If any extensions of time under 37 C.F.R. § 1.136(a) are required in order for this submission to be considered timely, Applicant hereby petitions for such extensions. Applicant also hereby authorizes that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. § 1.16 or § 1.17, be charged to deposit account 502306.

Respectfully submitted,

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